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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,568	01/10/2007	Yoshito Oki	293768US0PCT	8924

22850 7590 02/08/2011
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ALEXANDRIA, VA 22314

EXAMINER

WALCK, BRIAN D

ART UNIT	PAPER NUMBER
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1736

NOTIFICATION DATE	DELIVERY MODE
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02/08/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/587,568	Applicant(s) OKI ET AL.	
	Examiner Brian Walck	Art Unit 1736	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 January 2011.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6 and 10-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 6 and 10-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of Claims

1. Claims 1-5 and 7-9 are canceled. Claims 32-35 are newly added. Claims 6 and 10-35 are pending where claims 6, 14, and 22 have been amended. Claim 28 is withdrawn from consideration and claims 6, 10-27, and 29-35 remain for examination on the merits.

Status of Previous Rejections

2. The previous 35 USC § 102/103 rejections of the claims over Kuroda have been withdrawn in view of the submission of a translation of foreign priority papers has not been made of record in accordance with 37 CFR 1.55.
3. The previous 35 USC § 102/103 rejections of the claims over Shoji have been maintained.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claims 33 and 35 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

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Claims 33 and 35 recite the limitation “the high-strength aluminum alloy fin material according to claim 6 (or 22), which consists of said Si, Fe, Mn, Zn, Mg and Al.” This limitation is new matter which is not supported in the disclosure or claims as originally filed.

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 6, 10-21, 29-30, 32, 33 and 35 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The term "good" in claim 6 (from which claims 10-21, 29-30, 32, and 33 depend) is a relative term which renders the claim indefinite. The term "excelling" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention. This renders the thermal conductivity, erosion resistance, sag resistance, sacrificial anode effect and self-corrosion resistance of the aluminum alloy fin material of instant claim 6 indefinite, which renders the scope of the claim indefinite.

Additionally, claims 33 and 35 recites the limitation “The high-strength aluminum alloy fin material according to claim 6 (or 22), which consists of said Si, Fe, Mn, Zn, Mg and Al.” This limitation is indefinite because it contradicts the limitation of the parent claim that the fin material comprises impurities in addition to Si, Fe, Mn, Zn, Mg, and Al.

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

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not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 6, 10-23, 25-27, and 29-35 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 2002-161323 to Shoji et al (cited by applicant in IDS) in view of the evidentiary references the article titled “Aluminum Alloys” by Lyle et al and the article titled “Aluminum and Aluminum Alloys” by Sanders.

Regarding claims 6 and 27, Shoji discloses several high-strength aluminum alloy fin material for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect comprising the instantly claimed composition, for example alloy 6 (Shoji, Table 1, alloy 6), which lies wholly within the instantly claimed composition:

Element	Claimed wt%	Shoji wt%	Lies within?
Si	0.8-1.4	0.8	Yes
Fe	0.15-0.7	0.2	Yes
Mn	1.5-3.0	1.6	Yes
Zn	0.5-2.5	1.5	Yes
Al	Balance	Balance	Yes
Mg	0-0.05	~0	Yes

Although Shoji does not explicitly disclose that Mg is present as an impurity in the alloy, both Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Mg is either inherently present or is expected to be present as a trace impurity in typical aluminum alloys. Therefore, Mg is either inherently or expected to be present in the aluminum alloy of Shoji.

Although Shoji does not explicitly disclose the instantly claimed tensile strength before or after brazing or recrystallized grain size after brazing, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(b) or 35 U.S.C. 103(a) is eminently fair and acceptable.

Regarding claims 10 and 11, aluminum alloy fin material number 7 (Shoji, Table 1, alloy 7) of Shoji lies wholly within the instantly claimed composition ranges.

Regarding claims 13, aluminum alloy fin material number 6 (Shoji, Table 1, alloy 6) of Shoji lies wholly within the instantly claimed composition ranges.

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Regarding claim 19-21, Shoji discloses that in alloy 6, Cu is present in an amount of 0.15 wt% (within the claimed range of at most 0.2 wt%), Zr is present in an amount of 0.16 wt% (within the claimed range of at most 0.2 wt%) and Cr, Ti, and V are present in no more than negligible levels (Shoji, Table at top of page 7, alloy 14). Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Cr, Ti, and V are present in trace quantities in aluminum metal

Regarding claims 15-18 and 30 although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have the same composition, structure, and purpose. Therefore, a rejection based alternatively on either 35 U.S.C. 102(b) or 35 U.S.C. 103(a) is eminently fair and acceptable.

Regarding claims 12, 14, 22, 23, 25, and 29, Shoji discloses a high-strength aluminum alloy fin material for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect comprising the following composition (Shoji, Table 3, alloy 14), which lies within the instantly claimed composition as follows:

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Element	Claimed wt%	Shoji wt%	Lies within?
Si	0.9-1.4	1.0	Yes
Fe	0.15-0.7	0.6	Yes
Mn	2.2-3.0	2.3	Yes
Zn	1.0-1.5	1.0	Yes
Al	Balance	Balance	Yes
Mg	0-0.02	~0	Yes

Although Shoji does not explicitly disclose that Mg is present as an impurity in the alloy, both Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Mg is either inherently present or is expected to be present as a trace impurity in typical aluminum alloys. Therefore, Mg is either inherently or expected to be present in the aluminum alloy of Shoji.

Although Shoji does not explicitly disclose the instantly claimed tensile strength before or after brazing or recrystallized grain size after brazing, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or

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very similar properties to the instantly claimed aluminum alloy fin material because both have substantially the same composition, structure, and purpose.

Regarding claim 26 Shoji discloses that in alloy 14, Cu is present in an amount of 0.15 wt% (within the claimed range of at most 0.2 wt%), Zr is present in an amount of 0.2 wt% (within the claimed range of at most 0.2 wt%) and Cr, Ti, and V are present in no more than negligible levels (Shoji, Table at top of page 7, alloy 14). Sanders (Sanders, page 305, "11. Aluminum Alloys") and Lyle (Lyle, page 12, "3.1.1. Impurities in the Molten Metal" and Table 4) disclose that Cr, Ti, and V are present in trace quantities in aluminum metal

Regarding claim 31, although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have substantially the same composition, structure, and purpose.

Regarding claims 32 and 34, the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. For the

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purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially affect the basic and novel characteristics of applicant's invention (see MPEP 2111.03 [R-3]). In the instant case, there is no clear indication in the instant specification or instant claims that Shoji contains any additional materials that materially affect the basic and novel characteristics of applicant's invention.

Regarding claims 33 and 35, claims 33 and 35 are indefinite as outlined above as the independent claims both require impurities whereas claims 33 and 35 appear to exclude impurities. As impurities appear to be necessarily present in the alloy of the invention, the claims have been interpreted as additionally reciting impurities. With this in mind, the only elements recited in alloys 6 and 14 of Shoji that are not explicitly recited in claims 33 and 35 are copper and zinc, both of which fall within the impurity limits set forth in the instant specification for Cu and Cr set forth in the instant specification on page 7, lines 18-21.

Claim Rejections - 35 USC § 103

13. Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2002-161323 to Shoji et al (cited by applicant in IDS) in view of the evidentiary

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references the article titled “Aluminum Alloys” by Lyle et al and the article titled “Aluminum and Aluminum Alloys” by Sanders.

Regarding claim 24, Shoji discloses a high-strength aluminum alloy fin material for heat exchangers having high strength and excelling in thermal conductivity and sacrificial anode effect comprising the following composition (Shoji, Table 3, alloy 14), which is extremely close to the instantly claimed composition as follows:

Element	Claimed wt%	Shoji wt%	Lies within?
Si	0.9-1.4	1.0	Yes
Fe	0.17-0.55	0.6	Close at 0.55-0.6
Mn	2.2-3.0	2.3	Yes
Zn	1.0-1.5	1.0	Yes
Al	Balance	Balance	Yes
Mg	0-0.02	~0	Yes

A prima facie case of obviousness exists where the claimed ranges and prior art ranges do not overlap but are close enough that one skilled in the art would have expected them to have the same properties (See MPEP 2144.05 [R-5]). In the instant case, the composition of alloy 14 of Shoji is close enough to the instantly claimed composition range that one of ordinary skill in the art would expect alloy 14 of Shoji and the instantly claimed aluminum alloy fin material to have the same properties.

Response to Arguments

14. Applicant's arguments filed 1/27/2011 have been fully considered but they are not persuasive.

Applicant argues that Shoji contains Zr and Cu, which are outside the scope of the instant claims. This is not found persuasive because the composition of the instant independent claims is described using the open ended transitional phrase "comprising." The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. MPEP 2111.03 [R-3]. Additionally, the level of Zr and Cu found in the alloy of Shoji is within the level for Zr and Cu set forth in the instant specification, page 7, lines 18-21.

Applicant argues that Shoji teaches adding Mg in an amount between 0.05-0.20, which is outside the instantly claimed range. This is not found persuasive because Shoji can be **optionally** added in an amount between 0.05-0.20, and alloys 6 and 14 do not include such additions of Mg. Any Mg present in alloys 6 and 14 is present at much lower amounts as an impurity as set forth in Sanders and Lyle.

Applicant argues that Shoji fails to suggest the improved combination of properties recited in the instant claims. This is not found persuasive because although Shoji does not explicitly disclose the instantly claimed properties, when the structure recited in the reference is substantially identical to that of the claims, claimed properties or functions are presumed to be inherent. Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by

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identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established (see MPEP 2112.01 [R-3].) In the instant case, the aluminum alloy fin material of Shoji would be expected to have the same properties or very similar properties to the instantly claimed aluminum alloy fin material because both have substantially the same composition, structure, and purpose.

Conclusion

15. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian Walck whose telephone number is (571)270-5905. The examiner can normally be reached on Monday-Friday 9 AM-6:30 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571)272-1358. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Brian Walck/
Examiner, Art Unit 1736

/Stanley Silverman/
Supervisory Patent Examiner, Art Unit 1736